

SEQUENCE LISTING

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<120> Recombinant Expression Vectors for Functional Nav1.9 Sodium Channels

<130> 51530-5007-US

<140> US 10/508,965
<141> 2005-04-11

<150> PCT/US03/08611
<151> 2003-03-20

<150> US 60/365,550
<151> 2002-03-20

<160> 35

<170> PatentIn version 3.1

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<212> DNA
<213> Rattus norvegicus

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tcc 1550	caa	gac	agc	tgt	cag	cag	ccg	cag	ata	gcc	gtc	gtc	tac	ttc		4743
	Ser	Gln	Asp	Ser	Cys	Gln	Gln	Pro	Gln	Ile	Ala	Val	Val	Tyr	Phe	
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gtc 1565	agt	tac	atc	atc	atc	tcc	ttc	ctc	atc	gtg	gtc	aac	atg	tac		4788
	Val	Ser	Tyr	Ile	Ile	Ile	Ser	Phe	Leu	Ile	Val	Val	Asn	Met	Tyr	
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	Ile	Ala	Val	Ile	Leu	Glu	Asn	Phe	Asn	Thr	Ala	Thr	Glu	Glu	Ser	
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	Glu	Asp	Pro	Leu	Gly	Glu	Asp	Asp	Phe	Glu	Ile	Phe	Tyr	Glu	Val	
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	Trp	Glu	Lys	Phe	Asp	Pro	Glu	Ala	Ser	Gln	Phe	Ile	Gln	Tyr	Ser	
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	Ala	Leu	Ser	Asp	Phe	Ala	Asp	Ala	Leu	Pro	Glu	Pro	Leu	Arg	Val	

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Val Met Gly Asp Arg Leu	His Cys Met Asp Val	Leu Phe Ala Phe			
1655	1660	1665			
act acc agg gtc ctc ggg	gac tcc agc ggc ttg	gat acc atg aaa	5103		
Thr Thr Arg Val Leu Gly	Asp Ser Ser Gly Leu	Asp Thr Met Lys			
1670	1675	1680			
acc atg atg gag gag aag	ttt atg gag gcc aac	cct ttt aag aag	5148		
Thr Met Met Glu Glu Lys	Phe Met Glu Ala Asn	Pro Phe Lys Lys			
1685	1690	1695			
ctc tac gag ccc ata gtc	acc acc acc aag agg	aag gag gag gag	5193		
Leu Tyr Glu Pro Ile Val	Thr Thr Thr Lys Arg	Lys Glu Glu Glu			
1700	1705	1710			
caa ggc gcc gcc gtc atc	cag agg gcc tac cgg	aaa cac atg gag	5238		
Gln Gly Ala Ala Val Ile	Gln Arg Ala Tyr Arg	Lys His Met Glu			
1715	1720	1725			
aag atg gtc aaa ctg agg	ctg aag gac agg tca	agt tca tcg cac	5283		
Lys Met Val Lys Leu Arg	Leu Lys Asp Arg Ser	Ser Ser Ser His			
1730	1735	1740			
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Gln Val Phe Cys Asn Gly	Asp Leu Ser Ser Leu	Asp Val Ala Lys			
1745	1750	1755			
gtc aag gtt cac aat gac	tga accctcatct ccaccctac	ctcactgcct	5379		
Val Lys Val His Asn Asp					
1760	1765				
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Gln Pro Arg Pro Gln Leu Asp Leu Lys Ala Ser Arg Lys Leu Pro Lys
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Leu Tyr Gly Asp Ile Pro Pro Glu Leu Val Ala Lys Pro Leu Glu Asp
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Leu Asp Pro Phe Tyr Lys Asp His Lys Thr Phe Met Val Leu Asn Lys
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Lys Arg Thr Ile Tyr Arg Phe Ser Ala Lys Arg Ala Leu Phe Ile Leu
100 105 110

Gly Pro Phe Asn Pro Leu Arg Ser Leu Met Ile Arg Ile Ser Val His
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Ser Val Phe Ser Met Phe Ile Ile Cys Thr Val Ile Ile Asn Cys Met
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Phe Met Ala Asn Ser Met Glu Arg Ser Phe Asp Asn Asp Ile Pro Glu
145 150 155 160

Tyr Val Phe Ile Gly Ile Tyr Ile Leu Glu Ala Val Ile Lys Ile Leu
165 170 175

Ala Arg Gly Phe Ile Val Asp Glu Phe Ser Phe Leu Arg Asp Pro Trp
180 185 190

Asn Trp Leu Asp Phe Ile Val Ile Gly Thr Ala Ile Ala Thr Cys Phe
195 200 205

Pro Gly Ser Gln Val Asn Leu Ser Ala Leu Arg Thr Phe Arg Val Phe
210 215 220

Arg Ala Leu Lys Ala Ile Ser Val Ile Ser Gly Leu Lys Val Ile Val
 225 230 235 240

Gly Ala Leu Leu Arg Ser Val Lys Lys Leu Val Asp Val Met Val Leu
 245 250 255

Thr Leu Phe Cys Leu Ser Ile Phe Ala Leu Val Gly Gln Gln Leu Phe
 260 265 270

Met Gly Ile Leu Asn Gln Lys Cys Ile Lys His Asn Cys Gly Pro Asn
 275 280 285

Pro Ala Ser Asn Lys Asp Cys Phe Glu Lys Glu Lys Asp Ser Glu Asp
 290 295 300

Phe Ile Met Cys Gly Thr Trp Leu Gly Ser Arg Pro Cys Pro Asn Gly
 305 310 315 320

Ser Thr Cys Asp Lys Thr Thr Leu Asn Pro Asp Asn Asn Tyr Thr Lys
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Phe Asp Asn Phe Gly Trp Ser Phe Leu Ala Met Phe Arg Val Met Thr
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Gln Asp Ser Trp Glu Arg Leu Tyr Arg Gln Ile Leu Arg Thr Ser Gly
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Tyr Leu Leu Asn Leu Thr Leu Ala Val Val Thr Met Ala Tyr Glu Glu
 385 390 395 400

Gln Asn Arg Asn Val Ala Ala Glu Thr Glu Ala Lys Glu Lys Met Phe
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Gln Glu Ala Gln Gln Leu Leu Arg Glu Glu Lys Glu Ala Leu Val Ala
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Met Gly Ile Asp Arg Ser Ser Leu Asn Ser Leu Gln Ala Ser Ser Phe
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Ser Pro Lys Lys Arg Lys Phe Phe Gly Ser Lys Thr Arg Lys Ser Phe
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Phe Met Arg Gly Ser Lys Thr Ala Gln Ala Ser Ala Ser Asp Ser Glu
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Asp Asp Ala Ser Lys Asn Pro Gln Leu Leu Glu Gln Thr Lys Arg Leu
485 490 495

Ser Gln Asn Leu Pro Val Asp Leu Phe Asp Glu His Val Asp Pro Leu
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His Arg Gln Arg Ala Leu Ser Ala Val Ser Ile Leu Thr Ile Thr Met
515 520 525

Gln Glu Gln Glu Lys Phe Gln Glu Pro Cys Phe Pro Cys Gly Lys Asn
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Leu Ala Ser Lys Tyr Leu Val Trp Asp Cys Ser Pro Gln Trp Leu Cys
545 550 555 560

Ile Lys Lys Val Leu Arg Thr Ile Met Thr Asp Pro Phe Thr Glu Leu
565 570 575

Ala Ile Thr Ile Cys Ile Ile Ile Asn Thr Val Phe Leu Ala Val Glu
580 585 590

His His Asn Met Asp Asp Asn Leu Lys Thr Ile Leu Lys Ile Gly Asn
595 600 605

Trp Val Phe Thr Gly Ile Phe Ile Ala Glu Met Cys Leu Lys Ile Ile
610 615 620

Ala Leu Asp Pro Tyr His Tyr Phe Arg His Gly Trp Asn Val Phe Asp
625 630 635 640

Ser Ile Val Ala Leu Leu Ser Leu Ala Asp Val Leu Tyr Asn Thr Leu
645 650 655

Ser Asp Asn Asn Arg Ser Phe Leu Ala Ser Leu Arg Val Leu Arg Val
660 665 670

Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Thr Leu Ile Lys Ile

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Ile Val Val Phe Ile Phe Ser Val Val Gly Met Arg Leu Phe Gly Thr				
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				720
Lys Phe Asn Lys Thr Ala Tyr Ala Thr Gln Glu Arg Pro Arg Arg Arg				
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				735
Trp His Met Asp Asn Phe Tyr His Ser Phe Leu Val Val Phe Arg Ile				
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				750
Leu Cys Gly Glu Trp Ile Glu Asn Met Trp Gly Cys Met Gln Asp Met				
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				765
Asp Gly Ser Pro Leu Cys Ile Ile Val Phe Val Leu Ile Met Val Ile				
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				780
Gly Lys Leu Val Val Leu Asn Leu Phe Ile Ala Leu Leu Leu Asn Ser				
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				795
				800
Phe Ser Asn Glu Glu Lys Asp Gly Ser Leu Glu Gly Glu Thr Arg Lys				
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				815
Thr Lys Val Gln Leu Ala Leu Asp Arg Phe Arg Arg Ala Phe Ser Phe				
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				830
Met Leu His Ala Leu Gln Ser Phe Cys Cys Lys Lys Cys Arg Arg Lys				
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				845
Asn Ser Pro Lys Pro Lys Glu Thr Thr Glu Ser Phe Ala Gly Glu Asn				
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				860
Lys Asp Ser Ile Leu Pro Asp Ala Arg Pro Trp Lys Glu Tyr Asp Thr				
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				875
				880
Asp Met Ala Leu Tyr Thr Gly Gln Ala Gly Ala Pro Leu Ala Pro Leu				
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				895
Ala Glu Val Glu Asp Asp Val Glu Tyr Cys Gly Glu Gly Gly Ala Leu				
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Pro Thr Ser Gln His Ser Ala Gly Val Gln Ala Gly Asp Leu Pro Pro
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Glu Thr Lys Gln Leu Thr Ser Pro Asp Asp Gln Gly Val Glu Met Glu
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Val Phe Ser Glu Glu Asp Leu His Leu Ser Ile Gln Ser Pro Arg Lys
 945 950 955 960

Lys Ser Asp Ala Val Ser Met Leu Ser Glu Cys Ser Thr Ile Asp Leu
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Pro Asp Arg Cys Phe Pro Lys Gly Leu Ser Cys His Phe Leu Cys His
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 1010 1015 1020

Arg Lys Thr Cys Tyr Gln Ile Val Lys His Ser Trp Phe Glu Ser
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Phe Ile Ile Phe Val Ile Leu Leu Ser Ser Gly Ala Leu Ile Phe
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Glu Asp Val Asn Leu Pro Ser Arg Pro Gln Val Glu Lys Leu Leu
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Arg Cys Thr Asp Asn Ile Phe Thr Phe Ile Phe Leu Leu Glu Met
 1070 1075 1080

Ile Leu Lys Trp Val Ala Phe Gly Phe Arg Arg Tyr Phe Thr Ser
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Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Val Val Ser Val Leu
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Ser Leu Met Asn Leu Pro Ser Leu Lys Ser Phe Arg Thr Leu Arg
 1115 1120 1125

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Val	Leu	Leu	Val	Cys	Leu	Ile	Phe	Trp	Leu	Val	Phe	Cys	Ile	Leu
1160						1165					1170			
Gly	Val	Asn	Leu	Phe	Ser	Gly	Lys	Phe	Gly	Arg	Cys	Ile	Asn	Gly
1175						1180					1185			
Thr	Asp	Ile	Asn	Met	Tyr	Leu	Asp	Phe	Thr	Glu	Val	Pro	Asn	Arg
1190						1195					1200			
Ser	Gln	Cys	Asn	Ile	Ser	Asn	Tyr	Ser	Trp	Lys	Val	Pro	Gln	Val
1205						1210					1215			
Asn	Phe	Asp	Asn	Val	Gly	Asn	Ala	Tyr	Leu	Ala	Leu	Leu	Gln	Val
1220						1225					1230			
Ala	Thr	Tyr	Lys	Gly	Trp	Leu	Glu	Ile	Met	Asn	Ala	Ala	Val	Asp
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Ser	Arg	Glu	Lys	Asp	Glu	Gln	Pro	Asp	Phe	Glu	Ala	Asn	Leu	Tyr
1250						1255					1260			
Ala	Tyr	Leu	Tyr	Phe	Val	Val	Phe	Ile	Ile	Phe	Gly	Ser	Phe	Phe
1265						1270					1275			
Thr	Leu	Asn	Leu	Phe	Ile	Gly	Val	Ile	Ile	Asp	Asn	Phe	Asn	Gln
1280						1285					1290			
Gln	Gln	Lys	Lys	Leu	Gly	Gly	Gln	Asp	Ile	Phe	Met	Thr	Glu	Glu
1295						1300					1305			
Gln	Lys	Lys	Tyr	Tyr	Asn	Ala	Met	Lys	Lys	Leu	Gly	Thr	Lys	Lys
1310						1315					1320			
Pro	Gln	Lys	Pro	Ile	Pro	Arg	Pro	Leu	Asn	Lys	Cys	Gln	Ala	Phe
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Val	Phe	Asp	Leu	Val	Thr	Ser	Gln	Val	Phe	Asp	Val	Ile	Ile	Leu
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Pro	Ser	Leu	Phe	Asn	Ile	Gly	Leu	Leu	Leu	Phe	Leu	Val	Met	Phe
1475						1480					1485			
Ile	Tyr	Ala	Ile	Phe	Gly	Met	Ser	Trp	Phe	Ser	Lys	Val	Lys	Lys
1490						1495					1500			
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1520						1525					1530			
Thr	Leu	Leu	Asn	Pro	Met	Leu	Glu	Ala	Lys	Glu	His	Cys	Asn	Ser
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Ser	Ser	Gln	Asp	Ser	Cys	Gln	Gln	Pro	Gln	Ile	Ala	Val	Val	Tyr

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Tyr Ile Ala Val Ile Leu Glu	Asn Phe Asn Thr Ala Thr Glu Glu			
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Ser Glu Asp Pro Leu Gly Glu	Asp Asp Phe Glu Ile Phe Tyr Glu			
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Val Trp Glu Lys Phe Asp Pro	Glu Ala Ser Gln Phe Ile Gln Tyr			
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Ser Ala Leu Ser Asp Phe Ala	Asp Ala Leu Pro Glu Pro Leu Arg			
1625	1630	1635		
Val Ala Lys Pro Asn Lys Phe	Gln Phe Leu Val Met Asp Leu Pro			
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Met Val Met Gly Asp Arg Leu	His Cys Met Asp Val Leu Phe Ala			
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Phe Thr Thr Arg Val Leu Gly	Asp Ser Ser Gly Leu Asp Thr Met			
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Lys Thr Met Met Glu Glu Lys	Phe Met Glu Ala Asn Pro Phe Lys			
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Lys Leu Tyr Glu Pro Ile Val	Thr Thr Thr Lys Arg Lys Glu Glu			
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Glu Gln Gly Ala Ala Val Ile	Gln Arg Ala Tyr Arg Lys His Met			
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Glu Lys Met Val Lys Leu Arg	Leu Lys Asp Arg Ser Ser Ser Ser			
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Leu Ala Ile Arg Val Ser Val His Ser Leu Phe Ser Met Phe Ile Ile
                               125                               130                               135

ggc acc gtt atc atc aac tgc gtg ttc atg gct aca ggg cct gct aaa      486
Gly Thr Val Ile Ile Asn Cys Val Phe Met Ala Thr Gly Pro Ala Lys
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att tat att ttt gaa gct ttg att aaa ata ttg gca aga ggt ttc att      582
Ile Tyr Ile Phe Glu Ala Leu Ile Lys Ile Leu Ala Arg Gly Phe Ile
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aag tac ctc gtg tgg aac tgt tgc ccc cag tgg ctg tgc gtt aag aag Lys Tyr Leu Val Trp Asn Cys Cys Pro Gln Trp Leu Cys Val Lys Lys 555 560 565	1734
gtc ctg aga act gtg atg act gac ccg ttt act gag ctg gcc atc acc Val Leu Arg Thr Val Met Thr Asp Pro Phe Thr Glu Leu Ala Ile Thr 570 575 580	1782
atc tgc atc atc atc aac act gtc ttc ttg gcc atg gag cat cac aag Ile Cys Ile Ile Ile Asn Thr Val Phe Leu Ala Met Glu His His Lys 585 590 595 600	1830
atg gag gcc agt ttt gag aag atg ttg aat ata ggg aat ttg gtt ttc Met Glu Ala Ser Phe Glu Lys Met Leu Asn Ile Gly Asn Leu Val Phe 605 610 615	1878
act agc att ttt ata gca gaa atg tgc cta aaa atc att gcg ctc gat Thr Ser Ile Phe Ile Ala Glu Met Cys Leu Lys Ile Ile Ala Leu Asp 620 625 630	1926
ccc tac cac tac ttt cgc cga ggc tgg aac att ttt gac agc att gtt Pro Tyr His Tyr Phe Arg Arg Gly Trp Asn Ile Phe Asp Ser Ile Val 635 640 645	1974
gct ctt ctg agt ttt gca gat gta atg aac tgt gta ctt caa aag aga	2022

Ala	Leu	Leu	Ser	Phe	Ala	Asp	Val	Met	Asn	Cys	Val	Leu	Gln	Lys	Arg		
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Ser	Trp	Pro	Phe	Leu	Arg	Ser	Phe	Arg	Val	Leu	Arg	Val	Phe	Lys	Leu		
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gcc	aaa	tcc	tgg	cca	act	ttg	aac	aca	cta	att	aag	ata	atc	ggc	aac	2118	
Ala	Lys	Ser	Trp	Pro	Thr	Leu	Asn	Thr	Leu	Ile	Lys	Ile	Ile	Gly	Asn		
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tct	gtc	gga	gcc	ctt	gga	agc	ctg	act	gtg	gtc	ctg	gtc	att	gtg	atc	2166	
Ser	Val	Gly	Ala	Leu	Gly	Ser	Leu	Thr	Val	Val	Leu	Val	Ile	Val	Ile		
			700					705					710				
ttt	att	ttc	tca	gta	gtt	ggc	atg	cag	ctt	ttt	ggc	cgt	agc	ttc	aat	2214	
Phe	Ile	Phe	Ser	Val	Val	Gly	Met	Gln	Leu	Phe	Gly	Arg	Ser	Phe	Asn		
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tcc	caa	aag	agt	cca	aaa	ctc	tgt	aac	ccg	aca	ggc	ccg	aca	gtc	tca	2262	
Ser	Gln	Lys	Ser	Pro	Lys	Leu	Cys	Asn	Pro	Thr	Gly	Pro	Thr	Val	Ser		
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tgt	tta	cgg	cac	tgg	cac	atg	ggg	gat	ttc	tgg	cac	tcc	ttc	cta	gtg	2310	
Cys	Leu	Arg	His	Trp	His	Met	Gly	Asp	Phe	Trp	His	Ser	Phe	Leu	Val		
745				750					755					760			
gta	ttc	cgc	atc	ctc	tgc	ggg	gaa	tgg	atc	gaa	aat	atg	tgg	gaa	tgt	2358	
Val	Phe	Arg	Ile	Leu	Cys	Gly	Glu	Trp	Ile	Glu	Asn	Met	Trp	Glu	Cys		
			765					770					775				
atg	caa	gaa	gcg	aat	gca	tca	tca	tca	ttg	tgt	gtt	att	gtc	ttc	ata	2406	
Met	Gln	Glu	Ala	Asn	Ala	Ser	Ser	Ser	Leu	Cys	Val	Ile	Val	Phe	Ile		
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Leu	Ile	Thr	Val	Ile	Gly	Lys	Leu	Val	Val	Leu	Asn	Leu	Phe	Ile	Ala		
		795					800					805					
tta	ctg	ctc	aat	tcc	ttt	agc	aat	gag	gaa	aga	aat	gga	aac	tta	gaa	2502	
Leu	Leu	Leu	Asn	Ser	Phe	Ser	Asn	Glu	Glu	Arg	Asn	Gly	Asn	Leu	Glu		
	810					815					820						
gga	gag	gcc	agg	aaa	act	aaa	gtc	cag	tta	gca	ctg	gat	cga	ttc	cgc	2550	
Gly	Glu	Ala	Arg	Lys	Thr	Lys	Val	Gln	Leu	Ala	Leu	Asp	Arg	Phe	Arg		
825					830				835						840		
cgg	gct	ttt	tgt	ttt	gtg	aga	cac	act	ctt	gag	cat	ttc	tgt	cac	aag	2598	
Arg	Ala	Phe	Cys	Phe	Val	Arg	His	Thr	Leu	Glu	His	Phe	Cys	His	Lys		
			845						850					855			
tgg	tgc	agg	aag	caa	aac	tta	cca	cag	caa	aaa	gag	gtg	gca	gga	ggc	2646	
Trp	Cys	Arg	Lys	Gln	Asn	Leu	Pro	Gln	Gln	Lys	Glu	Val	Ala	Gly	Gly		
			860					865					870				
tgt	gct	gca	caa	agc	aaa	gac	atc	att	ccc	ctg	gtc	atg	gag	atg	aaa	2694	
Cys	Ala	Ala	Gln	Ser	Lys	Asp	Ile	Ile	Pro	Leu	Val	Met	Glu	Met	Lys		

875	880	885	
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aag acc ctg ggc gtc agg cat gat tgg act tgg ttg gca cca ctt gcg Lys Thr Leu Gly Val Arg His Asp Trp Thr Trp Leu Ala Pro Leu Ala 905 910 915 920			2790
gag gag gaa gat gac gtt gaa ttt tct ggt gaa gat aat gca cag cgc Glu Glu Glu Asp Asp Val Glu Phe Ser Gly Glu Asp Asn Ala Gln Arg 925 930 935			2838
atc aca caa cct gag cct gaa caa cag gcc tat gag ctc cat cag gag Ile Thr Gln Pro Glu Pro Glu Gln Gln Ala Tyr Glu Leu His Gln Glu 940 945 950			2886
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tct gat gtt acc agt ata cta tca gaa tgt agc acc att gat ctt cag Ser Asp Val Thr Ser Ile Leu Ser Glu Cys Ser Thr Ile Asp Leu Gln 985 990 995 1000			3030
gat ggc ttt gga tgg tta cct gag atg gtt ccc aaa aag caa cca Asp Gly Phe Gly Trp Leu Pro Glu Met Val Pro Lys Lys Gln Pro 1005 1010 1015			3075
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agc gtg gac aag aga aag cct ccc tgg gtc att tgg tgg aac ctg Ser Val Asp Lys Arg Lys Pro Pro Trp Val Ile Trp Trp Asn Leu 1035 1040 1045			3165
cgg aaa acc tgc tac caa ata gtg aaa cac agc tgg ttt gag agc Arg Lys Thr Cys Tyr Gln Ile Val Lys His Ser Trp Phe Glu Ser 1050 1055 1060			3210
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Val Leu Lys Trp Val Ala Phe Gly Phe Gly Lys Tyr Phe Thr Ser	
1110 1115 1120	
gcc tgg tgc tgc ctt gat ttc atc att gtg att gtc tct gtg acc	3435
Ala Trp Cys Cys Leu Asp Phe Ile Ile Val Ile Val Ser Val Thr	
1125 1130 1135	
acc ctc att aac tta atg gaa ttg aag tcc ttc cgg act cta cga	3480
Thr Leu Ile Asn Leu Met Glu Leu Lys Ser Phe Arg Thr Leu Arg	
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Ala Leu Arg Pro Leu Arg Ala Leu Ser Gln Phe Glu Gly Met Lys	
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Gly Val Tyr Phe Phe Ser Gly Lys Phe Gly Lys Cys Ile Asn Gly	
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Thr Asp Ser Val Ile Asn Tyr Thr Ile Ile Thr Asn Lys Ser Gln	
1215 1220 1225	
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Cys Glu Ser Gly Asn Phe Ser Trp Ile Asn Gln Lys Val Asn Phe	
1230 1235 1240	
gac aat gtg gga aat gct tac ctc gct ctg ctg caa gtg gca aca	3795
Asp Asn Val Gly Asn Ala Tyr Leu Ala Leu Leu Gln Val Ala Thr	
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Phe Lys Gly Trp Met Asp Ile Ile Tyr Ala Ala Val Asp Ser Thr	
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Ile Tyr Phe Val Val Phe Ile Ile Phe Gly Ser Phe Phe Thr Leu	
1290 1295 1300	
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Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln Gln	
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Lys Lys Leu Gly Gly	Gln Asp Ile Phe Met	Thr Glu Glu Gln Lys	
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Lys Tyr Tyr Asn Ala	Met Lys Lys Leu Gly	Ser Lys Lys Pro Gln	
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Lys Pro Ile Pro Arg	Pro Leu Asn Lys Cys	Gln Gly Leu Val Phe	
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gac ata gtc aca agc	cag atc ttt gac atc	atc atc ata agt ctc	4155
Asp Ile Val Thr Ser	Gln Ile Phe Asp Ile	Ile Ile Ile Ser Leu	
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att atc cta aac atg	att agc atg atg gct	gaa tca tac aac caa	4200
Ile Ile Leu Asn Met	Ile Ser Met Met Ala	Glu Ser Tyr Asn Gln	
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ccc aaa gcc atg aaa	tcc atc ctt gac cat	ctc aac tgg gtc ttt	4245
Pro Lys Ala Met Lys	Ser Ile Leu Asp His	Leu Asn Trp Val Phe	
1395	1400	1405	
gtg gtc atc ttt acg	tta gaa tgt ctc atc	aaa atc ttt gct ttg	4290
Val Val Ile Phe Thr	Leu Glu Cys Leu Ile	Lys Ile Phe Ala Leu	
1410	1415	1420	
agg caa tac tac ttc	acc aat ggc tgg aat	tta ttt gac tgt gtg	4335
Arg Gln Tyr Tyr Phe	Thr Asn Gly Trp Asn	Leu Phe Asp Cys Val	
1425	1430	1435	
gtc gtg ctt ctt tcc	att gtt agt aca atg	att tct acc ttg gaa	4380
Val Val Leu Leu Ser	Ile Val Ser Thr Met	Ile Ser Thr Leu Glu	
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aat cag gag cac att	cct ttc cct ccg acg	ctc ttc aga att gtc	4425
Asn Gln Glu His Ile	Pro Phe Pro Pro Thr	Leu Phe Arg Ile Val	
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cgc ttg gct cgg att	ggc cga atc ctg agg	ctt gtc cgg gct gca	4470
Arg Leu Ala Arg Ile	Gly Arg Ile Leu Arg	Leu Val Arg Ala Ala	
1470	1475	1480	
cga gga atc agg act	ctc ctc ttt gct ctg	atg atg tcg ctt cct	4515
Arg Gly Ile Arg Thr	Leu Leu Phe Ala Leu	Met Met Ser Leu Pro	
1485	1490	1495	
tct ctg ttc aac att	ggg ctt cta ctc ttt	ctg att atg ttt atc	4560
Ser Leu Phe Asn Ile	Gly Leu Leu Leu Phe	Leu Ile Met Phe Ile	
1500	1505	1510	
tat gcc att ctg ggt	atg aac tgg ttt tcc	aaa gtg aat cca gag	4605
Tyr Ala Ile Leu Gly	Met Asn Trp Phe Ser	Lys Val Asn Pro Glu	
1515	1520	1525	
tct gga atc gat gac	ata ttc aac ttc aag	act ttt gcc agc agc	4650

Ser Gly Ile Asp Asp	Ile Phe Asn Phe Lys	Thr Phe Ala Ser Ser	
1530	1535	1540	
atg ctc tgt ctc ttc	cag ata agc aca tca	gca ggt tgg gat tcc	4695
Met Leu Cys Leu Phe	Gln Ile Ser Thr Ser	Ala Gly Trp Asp Ser	
1545	1550	1555	
ctg ctc agc ccc atg	ctg cga tca aaa gaa	tca tgt aac tct tcc	4740
Leu Leu Ser Pro Met	Leu Arg Ser Lys Glu	Ser Cys Asn Ser Ser	
1560	1565	1570	
tca gaa aac tgc cac	ctc cct ggc ata gcc	aca tcc tac ttt gtc	4785
Ser Glu Asn Cys His	Leu Pro Gly Ile Ala	Thr Ser Tyr Phe Val	
1575	1580	1585	
agt tac att atc atc	tcc ttt ctc att gtt	gtc aac atg tac att	4830
Ser Tyr Ile Ile Ile	Ser Phe Leu Ile Val	Val Asn Met Tyr Ile	
1590	1595	1600	
gct gtg att tta gag	aac ttc aat aca gcc	act gaa gaa agt gag	4875
Ala Val Ile Leu Glu	Asn Phe Asn Thr Ala	Thr Glu Glu Ser Glu	
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gac cct ttg ggt gaa	gat gac ttt gac ata	ttt tat gaa gtg tgg	4920
Asp Pro Leu Gly Glu	Asp Asp Phe Asp Ile	Phe Tyr Glu Val Trp	
1620	1625	1630	
gaa aag ttt gac cca	gaa gca aca caa ttt	atc aaa tat tct gcc	4965
Glu Lys Phe Asp Pro	Glu Ala Thr Gln Phe	Ile Lys Tyr Ser Ala	
1635	1640	1645	
ctt tct gac ttt gct	gat gcc ttg cct gag	cct ttg cgt gtc gca	5010
Leu Ser Asp Phe Ala	Asp Ala Leu Pro Glu	Pro Leu Arg Val Ala	
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Lys Pro Asn Lys Tyr	Gln Phe Leu Val Met	Asp Leu Pro Met Val	
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Ser Glu Asp Arg Leu	His Cys Met Asp Ile	Leu Phe Ala Phe Thr	
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gct agg gta ctc ggt	ggc tct gat ggc cta	gat agt atg aaa gca	5145
Ala Arg Val Leu Gly	Gly Ser Asp Gly Leu	Asp Ser Met Lys Ala	
1695	1700	1705	
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Met Met Glu Glu Lys	Phe Met Glu Ala Asn	Pro Leu Lys Lys Leu	
1710	1715	1720	
tat gaa ccc ata gtc	acc acc acc aag aga	aag gaa gag gaa aga	5235
Tyr Glu Pro Ile Val	Thr Thr Thr Lys Arg	Lys Glu Glu Glu Arg	
1725	1730	1735	
ggg gct gct att att	caa aag gcc ttt cga	aag tac atg atg aag	5280
Gly Ala Ala Ile Ile	Gln Lys Ala Phe Arg	Lys Tyr Met Met Lys	

1740	1745	1750	
gtg acc aag ggt gac	caa ggt gac caa aat	gac ttg gaa aac ggg	5325
Val Thr Lys Gly Asp	Gln Gly Asp Gln Asn	Asp Leu Glu Asn Gly	
1755	1760	1765	
cct cat tca cca ctc	cag act ctt tgc aat	gga gac ttg tct agc	5370
Pro His Ser Pro Leu	Gln Thr Leu Cys Asn	Gly Asp Leu Ser Ser	
1770	1775	1780	
ttt ggg gtg gcc aag	ggc aag gtc cac tgt	gac tgagccctca	5413
Phe Gly Val Ala Lys	Gly Lys Val His Cys	Asp	
1785	1790		
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Ile Gln Lys Glu Lys Lys Lys Ser Lys Asp Gln Thr Gly Glu Val Pro			
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Gln Pro Arg Pro Gln Leu Asp Leu Lys Ala Ser Arg Lys Leu Pro Lys			
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Leu Tyr Gly Asp Ile Pro Arg Glu Leu Ile Gly Lys Pro Leu Glu Asp			
65	70	75	80
Leu Asp Pro Phe Tyr Arg Asn His Lys Thr Phe Met Val Leu Asn Arg			
85	90	95	

Lys Arg Thr Ile Tyr Arg Phe Ser Ala Lys His Ala Leu Phe Ile Phe
 100 105 110

Gly Pro Phe Asn Ser Ile Arg Ser Leu Ala Ile Arg Val Ser Val His
 115 120 125

Ser Leu Phe Ser Met Phe Ile Ile Gly Thr Val Ile Ile Asn Cys Val
 130 135 140

Phe Met Ala Thr Gly Pro Ala Lys Asn Ser Asn Ser Asn Asn Thr Asp
 145 150 155 160

Ile Ala Glu Cys Val Phe Thr Gly Ile Tyr Ile Phe Glu Ala Leu Ile
 165 170 175

Lys Ile Leu Ala Arg Gly Phe Ile Leu Asp Glu Phe Ser Phe Leu Arg
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Asp Pro Trp Asn Trp Leu Asp Ser Ile Val Ile Gly Ile Ala Ile Val
 195 200 205

Ser Tyr Ile Pro Gly Ile Thr Ile Lys Leu Leu Pro Leu Arg Thr Phe
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Arg Val Phe Arg Ala Leu Lys Ala Ile Ser Val Val Ser Arg Leu Lys
 225 230 235 240

Val Ile Val Gly Ala Leu Leu Arg Ser Val Lys Lys Leu Val Asn Val
 245 250 255

Ile Ile Leu Thr Phe Phe Cys Leu Ser Ile Phe Ala Leu Val Gly Gln
 260 265 270

Gln Leu Phe Met Gly Ser Leu Asn Leu Lys Cys Ile Ser Arg Asp Cys
 275 280 285

Lys Asn Ile Ser Asn Pro Glu Ala Tyr Asp His Cys Phe Glu Lys Lys
 290 295 300

Glu Asn Ser Pro Glu Phe Lys Met Cys Gly Ile Trp Met Gly Asn Ser
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Ala Cys Ser Ile Gln Tyr Glu Cys Lys His Thr Lys Ile Asn Pro Asp

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Tyr	Asn	Tyr	Thr	Asn	Phe	Asp	Asn	Phe	Gly	Trp	Ser	Phe	Leu	Ala	Met
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Phe	Arg	Leu	Met	Thr	Gln	Asp	Ser	Trp	Glu	Lys	Leu	Tyr	Gln	Gln	Thr
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Leu	Arg	Thr	Thr	Gly	Leu	Tyr	Ser	Val	Phe	Phe	Phe	Ile	Val	Val	Ile
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Phe	Leu	Gly	Ser	Phe	Tyr	Leu	Ile	Asn	Leu	Thr	Leu	Ala	Val	Val	Thr
385					390					395					400
Met	Ala	Tyr	Glu	Glu	Gln	Asn	Lys	Asn	Val	Ala	Ala	Glu	Ile	Glu	Ala
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Lys	Glu	Lys	Met	Phe	Gln	Glu	Ala	Gln	Gln	Leu	Leu	Lys	Glu	Glu	Lys
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		435					440					445			
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	450					455					460				
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465					470					475					480
Gly	Ser	Asp	Ser	Asp	Glu	Asp	Cys	Gln	Lys	Lys	Pro	Gln	Leu	Leu	Glu
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Gln	Thr	Lys	Arg	Leu	Ser	Gln	Asn	Leu	Ser	Leu	Asp	His	Phe	Asp	Glu
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Leu	Thr	Ile	Thr	Met	Lys	Glu	Gln	Glu	Lys	Ser	Gln	Glu	Pro	Cys	Leu
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Pro Gln Trp Leu Cys Val Lys Lys Val Leu Arg Thr Val Met Thr Asp
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Pro Phe Thr Glu Leu Ala Ile Thr Ile Cys Ile Ile Ile Asn Thr Val
580 585 590

Phe Leu Ala Met Glu His His Lys Met Glu Ala Ser Phe Glu Lys Met
595 600 605

Leu Asn Ile Gly Asn Leu Val Phe Thr Ser Ile Phe Ile Ala Glu Met
610 615 620

Cys Leu Lys Ile Ile Ala Leu Asp Pro Tyr His Tyr Phe Arg Arg Gly
625 630 635 640

Trp Asn Ile Phe Asp Ser Ile Val Ala Leu Leu Ser Phe Ala Asp Val
645 650 655

Met Asn Cys Val Leu Gln Lys Arg Ser Trp Pro Phe Leu Arg Ser Phe
660 665 670

Arg Val Leu Arg Val Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn
675 680 685

Thr Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala Leu Gly Ser Leu
690 695 700

Thr Val Val Leu Val Ile Val Ile Phe Ile Phe Ser Val Val Gly Met
705 710 715 720

Gln Leu Phe Gly Arg Ser Phe Asn Ser Gln Lys Ser Pro Lys Leu Cys
725 730 735

Asn Pro Thr Gly Pro Thr Val Ser Cys Leu Arg His Trp His Met Gly
740 745 750

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Leu Ile Phe Cys Ile Leu Gly Val Asn Phe Phe Ser Gly Lys Phe	
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gga aga tgc att aat gga aca gac ata aat aaa tat ttc aac gct	3612
Gly Arg Cys Ile Asn Gly Thr Asp Ile Asn Lys Tyr Phe Asn Ala	
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tcc aat gtt cca aac caa agc caa tgt tta gtt agt aat tac acg	3657
Ser Asn Val Pro Asn Gln Ser Gln Cys Leu Val Ser Asn Tyr Thr	
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Trp Lys Val Pro Asn Val Asn Phe Asp Asn Val Gly Asn Ala Tyr	
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Leu Ala Leu Leu Gln Val Ala Thr Tyr Lys Gly Trp Leu Asp Ile	
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Met Asn Ala Ala Val Asp Ser Arg Gly Lys Asp Glu Gln Pro Ala	
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Phe Glu Ala Asn Leu Tyr Ala Tyr Leu Tyr Phe Val Val Phe Ile	
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Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile	
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Ile Asp Asn Phe Asn Gln Gln Gln Lys Lys Leu Gly Gly Gln Asp	
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aag tta gga acc aag aag cct caa aag ccc atc cca agg ccc ctg	4017
Lys Leu Gly Thr Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Leu	
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Asn Lys Cys Gln Ala Phe Val Phe Asp Leu Val Thr Ser Gln Val	
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Phe Asp Val Ile Ile Leu Gly Leu Ile Val Thr Asn Met Ile Ile	
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Met Met Ala Glu Ser Glu Gly Gln Pro Asn Glu Val Lys Lys Ile	
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Phe Asp Ile Leu Asn Ile Val Phe Val Val Ile Phe Thr Val Glu	
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Cys Leu Ile Lys Val Phe Ala Leu Arg Gln His Tyr Phe Thr Asn	
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ggc tgg aac tta ttt gat tgt gtg gtc gtg gtt ctt tcc atc att	4287
Gly Trp Asn Leu Phe Asp Cys Val Val Val Val Leu Ser Ile Ile	
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Ser Thr Leu Val Ser Gly Leu Glu Asn Ser Asn Val Phe Pro Pro	
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Thr Leu Phe Arg Ile Val Arg Leu Ala Arg Ile Gly Arg Ile Leu	
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aga ctg gtc cgg gcg gct cga gga atc agg aca ctc ctt ttc gcg	4422
Arg Leu Val Arg Ala Ala Arg Gly Ile Arg Thr Leu Leu Phe Ala	
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Leu Met Met Ser Leu Pro Ser Leu Phe Asn Ile Gly Leu Leu Leu	
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Asp Thr Phe Ser Gly Ser Met Leu Cys Leu Phe Gln Ile Thr Thr	
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Ile Ala Ile Val Tyr Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu	
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Ile Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn Phe Asn	
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aca gcc aca gag gag agc gag gac ccc ctg ggc gaa gac gac ttt	4827

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Glu	Ile	Phe	Tyr	Glu	Ile	Trp	Glu	Lys	Phe	Asp	Pro	Glu	Ala	Thr	
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Gln	Phe	Ile	Gln	Tyr	Ser	Ser	Leu	Ser	Asp	Phe	Ala	Asp	Ala	Leu	
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ccc	gag	ccg	ttg	cgt	gtg	gcc	aag	ccc	aac	agg	ttt	cag	ttt	ctc	4962
Pro	Glu	Pro	Leu	Arg	Val	Ala	Lys	Pro	Asn	Arg	Phe	Gln	Phe	Leu	
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Met	Met	Asp	Leu	Pro	Met	Val	Met	Gly	Asp	Arg	Leu	His	Cys	Met	
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Asp	Val	Leu	Phe	Ala	Phe	Thr	Thr	Arg	Val	Leu	Gly	Asn	Ser	Ser	
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Gly	Leu	Asp	Thr	Met	Lys	Ala	Met	Met	Glu	Glu	Lys	Phe	Met	Glu	
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Ala	Asn	Pro	Phe	Lys	Lys	Leu	Tyr	Glu	Pro	Ile	Val	Thr	Thr	Thr	
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aag	agg	aag	gag	gag	gag	gaa	tgt	gcc	gct	gtc	atc	cag	agg	gcc	5187
Lys	Arg	Lys	Glu	Glu	Glu	Glu	Cys	Ala	Ala	Val	Ile	Gln	Arg	Ala	
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Tyr	Arg	Arg	His	Met	Glu	Lys	Met	Ile	Lys	Leu	Lys	Leu	Lys	Gly	
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agg	tca	agt	tca	tcg	ctc	cag	gtg	ttt	tgc	aat	gga	gac	ttg	tct	5277
Arg	Ser	Ser	Ser	Ser	Leu	Gln	Val	Phe	Cys	Asn	Gly	Asp	Leu	Ser	
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agc	ttg	gat	gtg	ccc	aag	atc	aag	gtt	cat	tgt	gac	tgaaaccccc			5323
Ser	Leu	Asp	Val	Pro	Lys	Ile	Lys	Val	His	Cys	Asp				
1755						1760					1765				
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ggactcaccg	aacaggccgt	tcaacttggt	tttttggggtg	aaagaggtga	taggttggtg										5443
tccattttta	aatgattctt	ggaaagattg	aacgtcggaa	catgttagaa	aggactgcc										5503
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ggaaaggtca	catgtctggt	cagttttaag	tatgtgacct	gccacatgta	gctcctttgc										5623

atgttaagtg agaagtcaaa accctgccat aagtaaatag ctttggtgca ggtgtttcta 5683
ccagtgtctg ggatttgggt gtatggctca aacctgaaag catgactctg acttgtcagc 5743
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Ile Gln Lys Glu Lys Lys Lys Ser Lys Asp Lys Ala Ala Thr Glu Pro
35 40 45

Gln Pro Arg Pro Gln Leu Asp Leu Lys Ala Ser Arg Lys Leu Pro Lys
50 55 60

Leu Tyr Gly Asp Val Pro Pro Asp Leu Ile Ala Lys Pro Leu Glu Asp
65 70 75 80

Leu Asp Pro Phe Tyr Lys Asp His Lys Thr Phe Met Val Leu Asn Lys
85 90 95

Lys Arg Thr Ile Tyr Arg Phe Ser Ala Lys Arg Ala Leu Phe Ile Leu
100 105 110

Gly Pro Phe Asn Pro Ile Arg Ser Phe Met Ile Arg Ile Ser Val His
115 120 125

Ser Val Phe Ser Met Phe Ile Ile Cys Thr Val Ile Ile Asn Cys Met
130 135 140

Phe Met Ala Asn Asn Ser Ser Val Asp Ser Arg Pro Ser Ser Asn Ile
145 150 155 160

Pro Glu Tyr Val Phe Ile Gly Ile Tyr Val Leu Glu Ala Val Ile Lys
165 170 175

Ile	Leu	Ala	Arg	Gly	Phe	Ile	Val	Asp	Glu	Phe	Ser	Tyr	Leu	Arg	Asp	180	185	190	
Pro	Trp	Asn	Trp	Leu	Asp	Phe	Ile	Val	Ile	Gly	Thr	Ala	Ile	Ala	Pro	195	200	205	
Cys	Phe	Leu	Gly	Asn	Lys	Val	Asn	Asn	Leu	Ser	Thr	Leu	Arg	Thr	Phe	210	215	220	
Arg	Val	Leu	Arg	Ala	Leu	Lys	Ala	Ile	Ser	Val	Ile	Ser	Gly	Leu	Lys	225	230	235	240
Val	Ile	Val	Gly	Ala	Leu	Leu	Arg	Ser	Val	Lys	Lys	Leu	Val	Asp	Val	245	250	255	
Met	Val	Leu	Thr	Leu	Phe	Cys	Leu	Ser	Ile	Phe	Ala	Leu	Val	Gly	Gln	260	265	270	
Gln	Leu	Phe	Met	Gly	Ile	Leu	Ser	Gln	Lys	Cys	Ile	Lys	Asp	Asp	Cys	275	280	285	
Gly	Pro	Asn	Ala	Phe	Ser	Asn	Lys	Asp	Cys	Phe	Val	Lys	Glu	Asn	Asp	290	295	300	
Ser	Glu	Asp	Phe	Ile	Met	Cys	Gly	Asn	Trp	Leu	Gly	Arg	Arg	Ser	Cys	305	310	315	320
Pro	Asp	Gly	Ser	Thr	Cys	Asn	Lys	Thr	Thr	Phe	Asn	Pro	Asp	Tyr	Asn	325	330	335	
Tyr	Thr	Asn	Phe	Asp	Ser	Phe	Gly	Trp	Ser	Phe	Leu	Ala	Met	Phe	Arg	340	345	350	
Val	Met	Thr	Gln	Asp	Ser	Trp	Glu	Lys	Leu	Tyr	Arg	Gln	Ile	Leu	Arg	355	360	365	
Thr	Ser	Gly	Ile	Tyr	Phe	Val	Phe	Phe	Phe	Val	Val	Val	Ile	Phe	Leu	370	375	380	
Gly	Ser	Phe	Tyr	Leu	Leu	Asn	Leu	Thr	Leu	Ala	Val	Val	Thr	Met	Ala	385	390	395	400

Tyr Glu Glu Gln Asn Arg Asn Val Ala Ala Glu Thr Glu Ala Lys Glu
405 410 415

Lys Met Phe Gln Glu Ala Gln Gln Leu Leu Arg Glu Glu Lys Glu Ala
420 425 430

Leu Val Ala Met Gly Ile Asp Arg Thr Ser Leu Asn Ser Leu Gln Ala
435 440 445

Ser Ser Phe Ser Pro Lys Lys Arg Lys Phe Phe Gly Ser Lys Thr Arg
450 455 460

Lys Ser Phe Phe Met Arg Gly Ser Lys Thr Ala Arg Ala Ser Ala Ser
465 470 475 480

Asp Ser Glu Asp Asp Ala Ser Lys Asn Pro Gln Leu Leu Glu Gln Thr
485 490 495

Lys Arg Leu Ser Gln Asn Leu Pro Val Glu Leu Phe Asp Glu His Val
500 505 510

Asp Pro Leu His Arg Gln Arg Ala Leu Ser Ala Val Ser Ile Leu Thr
515 520 525

Ile Thr Met Gln Glu Gln Glu Lys Ser Gln Glu Pro Cys Phe Pro Cys
530 535 540

Gly Lys Asn Leu Ala Ser Lys Tyr Leu Val Trp Glu Cys Ser Pro Pro
545 550 555 560

Trp Leu Cys Ile Lys Lys Val Leu Gln Thr Ile Met Thr Asp Pro Phe
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Thr Glu Leu Ala Ile Thr Ile Cys Ile Ile Val Asn Thr Val Phe Leu
580 585 590

Ala Met Glu His His Asn Met Asp Asn Ser Leu Lys Asp Ile Leu Lys
595 600 605

Ile Gly Asn Trp Val Phe Thr Gly Ile Phe Ile Ala Glu Met Cys Leu
610 615 620

Lys Ile Ile Ala Leu Asp Pro Tyr His Tyr Phe Arg His Gly Trp Asn

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Ile Phe Asp Ser	Ile Val Ala Leu Val	Ser Leu Ala Asp Val	Leu Phe
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His Lys Leu Ser	Lys Asn Leu Ser	Phe Leu Ala Ser	Leu Arg Val Leu
	660	665	670
Arg Val Phe Lys	Leu Ala Lys Ser	Trp Pro Thr Leu	Asn Thr Leu Ile
	675	680	685
Lys Ile Ile Gly	His Ser Val Gly	Ala Leu Gly	Asn Leu Thr Val Val
	690	695	700
Leu Thr Ile Val	Val Phe Ile Phe	Ser Val Val Gly	Met Arg Leu Phe
	705	710	715
Gly Ala Lys Phe	Asn Lys Thr Cys	Ser Thr Ser Pro	Glu Ser Leu Arg
	725	730	735
Arg Trp His Met	Gly Asp Phe Tyr	His Ser Phe Leu	Val Val Phe Arg
	740	745	750
Ile Leu Cys Gly	Glu Trp Ile Glu	Asn Met Trp Glu	Cys Met Gln Glu
	755	760	765
Met Glu Gly Ser	Pro Leu Cys Val	Ile Val Phe Val	Leu Ile Met Val
	770	775	780
Val Gly Lys Leu	Val Val Leu Asn	Leu Phe Ile Ala	Leu Leu Leu Asn
	785	790	795
Ser Phe Ser Asn	Glu Glu Lys Asp	Gly Asn Pro Glu	Gly Glu Thr Arg
	805	810	815
Lys Thr Lys Val	Gln Leu Ala Leu	Asp Arg Phe Ser	Arg Ala Phe Tyr
	820	825	830
Phe Met Ala Arg	Ala Leu Gln Asn	Phe Cys Cys Lys	Arg Cys Arg Arg
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Gln Asn Ser Pro	Lys Pro Asn Glu	Ala Thr Glu Ser	Phe Ala Gly Glu
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Ser Arg Asp Thr Ala Thr Leu Asp Thr Arg Ser Trp Lys Glu Tyr Asp
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Ser Glu Met Thr Leu Tyr Thr Gly Gln Ala Gly Ala Pro Leu Ala Pro
885 890 895

Leu Ala Lys Glu Glu Asp Asp Met Glu Cys Cys Gly Glu Cys Asp Ala
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Ser Pro Thr Ser Gln Pro Ser Glu Glu Ala Gln Ala Cys Asp Leu Pro
915 920 925

Leu Lys Thr Lys Arg Leu Pro Ser Pro Asp Asp His Gly Val Glu Met
930 935 940

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945 950 955 960

Lys Lys Ser Asp Ala Ala Ser Met Leu Ser Glu Cys Ser Thr Ile Asp
965 970 975

Leu Asn Asp Ile Phe Arg Asn Leu Gln Lys Thr Val Ser Pro Gln Lys
980 985 990

Gln Pro Asp Arg Cys Phe Pro Lys Gly Leu Ser Cys Ile Phe Leu Cys
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Cys Lys Thr Ile Lys Lys Lys Ser Pro Trp Val Leu Trp Trp Asn
1010 1015 1020

Leu Arg Lys Thr Cys Tyr Gln Ile Val Lys His Ser Trp Phe Glu
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Ser Phe Ile Ile Phe Val Ile Leu Leu Ser Ser Gly Ala Leu Ile
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Phe Glu Asp Val Asn Leu Pro Ser Arg Pro Gln Val Glu Lys Leu
1055 1060 1065

Leu Lys Cys Thr Asp Asn Ile Phe Thr Phe Ile Phe Leu Leu Glu
1070 1075 1080

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Arg	Ala	Leu	Arg	Pro	Leu	Arg	Ala	Leu	Ser	Gln	Phe	Glu	Gly	Met
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Lys	Val	Val	Val	Asn	Ala	Leu	Met	Ser	Ala	Ile	Pro	Ala	Ile	Leu
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Asn	Val	Leu	Leu	Val	Cys	Leu	Ile	Phe	Trp	Leu	Ile	Phe	Cys	Ile
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Leu	Gly	Val	Asn	Phe	Phe	Ser	Gly	Lys	Phe	Gly	Arg	Cys	Ile	Asn
1175						1180					1185			
Gly	Thr	Asp	Ile	Asn	Lys	Tyr	Phe	Asn	Ala	Ser	Asn	Val	Pro	Asn
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Val	Ala	Thr	Tyr	Lys	Gly	Trp	Leu	Asp	Ile	Met	Asn	Ala	Ala	Val
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Asp	Ser	Arg	Gly	Lys	Asp	Glu	Gln	Pro	Ala	Phe	Glu	Ala	Asn	Leu
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Tyr	Ala	Tyr	Leu	Tyr	Phe	Val	Val	Phe	Ile	Ile	Phe	Gly	Ser	Phe
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Ser Ser	Gln Glu Ser Cys	Gln Gln Pro Gln	Ile Ala	Ile Val Tyr
1550		1555		1560
Phe Val	Ser Tyr Ile Ile	Ile Ser Phe Leu	Ile Val	Val Asn Met
1565		1570		1575
Tyr Ile	Ala Val Ile Leu	Glu Asn Phe Asn	Thr Ala	Thr Glu Glu
1580		1585		1590
Ser Glu	Asp Pro Leu Gly	Glu Asp Asp Phe	Glu Ile	Phe Tyr Glu
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Ile Trp	Glu Lys Phe Asp	Pro Glu Ala Thr	Gln Phe	Ile Gln Tyr
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Ser Ser	Leu Ser Asp Phe	Ala Asp Ala Leu	Pro Glu	Pro Leu Arg
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Val Ala	Lys Pro Asn Arg	Phe Gln Phe Leu	Met Met	Asp Leu Pro
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Met Val	Met Gly Asp Arg	Leu His Cys Met	Asp Val	Leu Phe Ala
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Phe Thr	Thr Arg Val Leu	Gly Asn Ser Ser	Gly Leu	Asp Thr Met
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Lys Ala	Met Met Glu Glu	Lys Phe Met Glu	Ala Asn	Pro Phe Lys
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Lys Leu	Tyr Glu Pro Ile	Val Thr Thr Thr	Lys Arg	Lys Glu Glu
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Glu Glu	Cys Ala Ala Val	Ile Gln Arg Ala	Tyr Arg	Arg His Met
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Glu Lys Met Ile Lys Leu Lys Leu Lys Gly Arg Ser Ser Ser Ser
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 Forward strand of SalI linker with NotI/XbaI overhangs

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 overhangs

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<220> <221> misc_feature <223> Reverse strand of SalI linker with NotI/XbaI
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 at nt 1264 and
 T>C at nt 4056

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Arg Pro Phe Thr Ser Asp Ser Leu Ala Ala Ile Glu Lys Arg Ile Ala
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Ile Gln Lys Glu Arg Lys Lys Ser Lys Asp Lys Ala Ala Ala Glu Pro
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Gln Pro Arg Pro Gln Leu Asp Leu Lys Ala Ser Arg Lys Leu Pro Lys
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Leu Tyr Gly Asp Ile Pro Pro Glu Leu Val Ala Lys Pro Leu Glu Asp
65          70          75          80

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Leu Asp Pro Phe Tyr Lys Asp His Lys Thr Phe Met Val Leu Asn Lys
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ggg cct ttt aat ccc ctc aga agc tta atg att cgt atc tct gtc cat      384
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Ser	Glu	Asp	Pro	Leu	Gly	Glu	Asp	Asp	Phe	Glu	Ile	Phe	Tyr	Glu	
1595						1600					1605				
gtc	tgg	gag	aag	ttt	gac	ccc	gag	gcg	tcg	cag	ttc	atc	cag	tat	4869
Val	Trp	Glu	Lys	Phe	Asp	Pro	Glu	Ala	Ser	Gln	Phe	Ile	Gln	Tyr	
1610						1615					1620				
tcg	gcc	ctc	tct	gac	ttt	gcg	gac	gcc	ctg	ccg	gag	ccg	ttg	cgt	4914
Ser	Ala	Leu	Ser	Asp	Phe	Ala	Asp	Ala	Leu	Pro	Glu	Pro	Leu	Arg	
1625						1630					1635				
gtg	gcc	aag	ccg	aat	aag	ttt	cag	ttt	cta	gtg	atg	gac	ttg	ccc	4959
Val	Ala	Lys	Pro	Asn	Lys	Phe	Gln	Phe	Leu	Val	Met	Asp	Leu	Pro	
1640						1645					1650				
atg	gtg	atg	ggc	gac	cgc	ctc	cat	tgc	atg	gat	gtt	ctc	ttt	gct	5004
Met	Val	Met	Gly	Asp	Arg	Leu	His	Cys	Met	Asp	Val	Leu	Phe	Ala	
1655						1660					1665				
ttc	act	acc	agg	gtc	ctc	ggg	gac	tcc	agc	ggc	ttg	gat	acc	atg	5049
Phe	Thr	Thr	Arg	Val	Leu	Gly	Asp	Ser	Ser	Gly	Leu	Asp	Thr	Met	
1670						1675					1680				
aaa	acc	atg	atg	gag	gag	aag	ttt	atg	gag	gcc	aac	cct	ttt	aag	5094
Lys	Thr	Met	Met	Glu	Glu	Lys	Phe	Met	Glu	Ala	Asn	Pro	Phe	Lys	
1685						1690					1695				
aag	ctc	tac	gag	ccc	ata	gtc	acc	acc	acc	aag	agg	aag	gag	gag	5139
Lys	Leu	Tyr	Glu	Pro	Ile	Val	Thr	Thr	Thr	Lys	Arg	Lys	Glu	Glu	
1700						1705					1710				
gag	caa	ggc	gcc	gcc	gtc	atc	cag	agg	gcc	tac	cgg	aaa	cac	atg	5184
Glu	Gln	Gly	Ala	Ala	Val	Ile	Gln	Arg	Ala	Tyr	Arg	Lys	His	Met	
1715						1720					1725				
gag	aag	atg	gtc	aaa	ctg	agg	ctg	aag	gac	agg	tca	agt	tca	tcg	5229
Glu	Lys	Met	Val	Lys	Leu	Arg	Leu	Lys	Asp	Arg	Ser	Ser	Ser	Ser	
1730						1735					1740				
cac	cag	gtg	ttt	tgc	aat	gga	gac	ttg	tcc	agc	ttg	gat	gtg	gcc	5274
His	Gln	Val	Phe	Cys	Asn	Gly	Asp	Leu	Ser	Ser	Leu	Asp	Val	Ala	

1745 1750 1755
 aag gtc aag gtt cac aat gac tga 5298
 Lys Val Lys Val His Asn Asp
 1760 1765

 <210> 20 <211> 1765 <212> PRT <213> Rattus norvegicus <400> 20
 Met Glu Glu Arg Tyr Tyr Pro Val Ile Phe Pro Asp Glu Arg Asn Phe
 1 5 10 15

 Arg Pro Phe Thr Ser Asp Ser Leu Ala Ala Ile Glu Lys Arg Ile Ala
 20 25 30

 Ile Gln Lys Glu Arg Lys Lys Ser Lys Asp Lys Ala Ala Ala Glu Pro
 35 40 45

 Gln Pro Arg Pro Gln Leu Asp Leu Lys Ala Ser Arg Lys Leu Pro Lys
 50 55 60

 Leu Tyr Gly Asp Ile Pro Pro Glu Leu Val Ala Lys Pro Leu Glu Asp
 65 70 75 80

 Leu Asp Pro Phe Tyr Lys Asp His Lys Thr Phe Met Val Leu Asn Lys
 85 90 95

 Lys Arg Thr Ile Tyr Arg Phe Ser Ala Lys Arg Ala Leu Phe Ile Leu
 100 105 110

 Gly Pro Phe Asn Pro Leu Arg Ser Leu Met Ile Arg Ile Ser Val His
 115 120 125

 Ser Val Phe Ser Met Phe Ile Ile Cys Thr Val Ile Ile Asn Cys Met
 130 135 140

 Phe Met Ala Asn Ser Met Glu Arg Ser Phe Asp Asn Asp Ile Pro Glu
 145 150 155 160

 Tyr Val Phe Ile Gly Ile Tyr Ile Leu Glu Ala Val Ile Lys Ile Leu
 165 170 175

 Ala Arg Gly Phe Ile Val Asp Glu Phe Ser Phe Leu Arg Asp Pro Trp
 180 185 190

Asn Trp Leu Asp Phe Ile Val Ile Gly Thr Ala Ile Ala Thr Cys Phe
 195 200 205

Pro Gly Ser Gln Val Asn Leu Ser Ala Leu Arg Thr Phe Arg Val Phe
 210 215 220

Arg Ala Leu Lys Ala Ile Ser Val Ile Ser Gly Leu Lys Val Ile Val
 225 230 235 240

Gly Ala Leu Leu Arg Ser Val Lys Lys Leu Val Asp Val Met Val Leu
 245 250 255

Thr Leu Phe Cys Leu Ser Ile Phe Ala Leu Val Gly Gln Gln Leu Phe
 260 265 270

Met Gly Ile Leu Asn Gln Lys Cys Ile Lys His Asn Cys Gly Pro Asn
 275 280 285

Pro Ala Ser Asn Lys Asp Cys Phe Glu Lys Glu Lys Asp Ser Glu Asp
 290 295 300

Phe Ile Met Cys Gly Thr Trp Leu Gly Ser Arg Pro Cys Pro Asn Gly
 305 310 315 320

Ser Thr Cys Asp Lys Thr Thr Leu Asn Pro Asp Asn Asn Tyr Thr Lys
 325 330 335

Phe Asp Asn Phe Gly Trp Ser Phe Leu Ala Met Phe Arg Val Met Thr
 340 345 350

Gln Asp Ser Trp Glu Arg Leu Tyr Arg Gln Ile Leu Arg Thr Ser Gly
 355 360 365

Ile Tyr Phe Val Phe Phe Phe Val Val Val Ile Phe Leu Gly Ser Phe
 370 375 380

Tyr Leu Leu Asn Leu Thr Leu Ala Val Val Thr Met Ala Tyr Glu Glu
 385 390 395 400

Gln Asn Arg Asn Val Ala Ala Glu Thr Glu Ala Lys Glu Lys Met Phe
 405 410 415

Gln Glu Ala Gln Gln Leu Leu Arg Glu Glu Lys Glu Ala Leu Val Ala

420	425	430
Met Gly Ile Asp Arg Ser Ser Leu Asn Ser Leu Gln Ala Ser Ser Phe		
435	440	445
Ser Pro Lys Lys Arg Lys Phe Phe Gly Ser Lys Thr Arg Lys Ser Phe		
450	455	460
Phe Met Arg Gly Ser Lys Thr Ala Gln Ala Ser Ala Ser Asp Ser Glu		
465	470	475
Asp Asp Ala Ser Lys Asn Pro Gln Leu Leu Glu Gln Thr Lys Arg Leu		
485	490	495
Ser Gln Asn Leu Pro Val Asp Leu Phe Asp Glu His Val Asp Pro Leu		
500	505	510
His Arg Gln Arg Ala Leu Ser Ala Val Ser Ile Leu Thr Ile Thr Met		
515	520	525
Gln Glu Gln Glu Lys Phe Gln Glu Pro Cys Phe Pro Cys Gly Lys Asn		
530	535	540
Leu Ala Ser Lys Tyr Leu Val Trp Asp Cys Ser Pro Gln Trp Leu Cys		
545	550	555
Ile Lys Lys Val Leu Arg Thr Ile Met Thr Asp Pro Phe Thr Glu Leu		
565	570	575
Ala Ile Thr Ile Cys Ile Ile Ile Asn Thr Val Phe Leu Ala Val Glu		
580	585	590
His His Asn Met Asp Asp Asn Leu Lys Thr Ile Leu Lys Ile Gly Asn		
595	600	605
Trp Val Phe Thr Gly Ile Phe Ile Ala Glu Met Cys Leu Lys Ile Ile		
610	615	620
Ala Leu Asp Pro Tyr His Tyr Phe Arg His Gly Trp Asn Val Phe Asp		
625	630	635
Ser Ile Val Ala Leu Leu Ser Leu Ala Asp Val Leu Tyr Asn Thr Leu		
645	650	655

Ser Asp Asn Asn Arg Ser Phe Leu Ala Ser Leu Arg Val Leu Arg Val
660 665 670

Phe Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Thr Leu Ile Lys Ile
675 680 685

Ile Gly His Ser Val Gly Ala Leu Gly Asn Leu Thr Val Val Leu Thr
690 695 700

Ile Val Val Phe Ile Phe Ser Val Val Gly Met Arg Leu Phe Gly Thr
705 710 715 720

Lys Phe Asn Lys Thr Ala Tyr Ala Thr Gln Glu Arg Pro Arg Arg Arg
725 730 735

Trp His Met Asp Asn Phe Tyr His Ser Phe Leu Val Val Phe Arg Ile
740 745 750

Leu Cys Gly Glu Trp Ile Glu Asn Met Trp Gly Cys Met Gln Asp Met
755 760 765

Asp Gly Ser Pro Leu Cys Ile Ile Val Phe Val Leu Ile Met Val Ile
770 775 780

Gly Lys Leu Val Val Leu Asn Leu Phe Ile Ala Leu Leu Leu Asn Ser
785 790 795 800

Phe Ser Asn Glu Glu Lys Asp Gly Ser Leu Glu Gly Glu Thr Arg Lys
805 810 815

Thr Lys Val Gln Leu Ala Leu Asp Arg Phe Arg Arg Ala Phe Ser Phe
820 825 830

Met Leu His Ala Leu Gln Ser Phe Cys Cys Lys Lys Cys Arg Arg Lys
835 840 845

Asn Ser Pro Lys Pro Lys Glu Thr Thr Glu Ser Phe Ala Gly Glu Asn
850 855 860

Lys Asp Ser Ile Leu Pro Asp Ala Arg Pro Trp Lys Glu Tyr Asp Thr
865 870 875 880

Asp Met Ala Leu Tyr Thr Gly Gln Ala Gly Ala Pro Leu Ala Pro Leu
885 890 895

Ala Glu Val Glu Asp Asp Val Glu Tyr Cys Gly Glu Gly Gly Ala Leu
900 905 910

Pro Thr Ser Gln His Ser Ala Gly Val Gln Ala Gly Asp Leu Pro Pro
915 920 925

Glu Thr Lys Gln Leu Thr Ser Pro Asp Asp Gln Gly Val Glu Met Glu
930 935 940

Val Phe Ser Glu Glu Asp Leu His Leu Ser Ile Gln Ser Pro Arg Lys
945 950 955 960

Lys Ser Asp Ala Val Ser Met Leu Ser Glu Cys Ser Thr Ile Asp Leu
965 970 975

Asn Asp Ile Phe Arg Asn Leu Gln Lys Thr Val Ser Pro Lys Lys Gln
980 985 990

Pro Asp Arg Cys Phe Pro Lys Gly Leu Ser Cys His Phe Leu Cys His
995 1000 1005

Lys Thr Asp Lys Arg Lys Ser Pro Trp Val Leu Trp Trp Asn Ile
1010 1015 1020

Arg Lys Thr Cys Tyr Gln Ile Val Lys His Ser Trp Phe Glu Ser
1025 1030 1035

Phe Ile Ile Phe Val Ile Leu Leu Ser Ser Gly Ala Leu Ile Phe
1040 1045 1050

Glu Asp Val Asn Leu Pro Ser Arg Pro Gln Val Glu Lys Leu Leu
1055 1060 1065

Arg Cys Thr Asp Asn Ile Phe Thr Phe Ile Phe Leu Leu Glu Met
1070 1075 1080

Ile Leu Lys Trp Val Ala Phe Gly Phe Arg Arg Tyr Phe Thr Ser
1085 1090 1095

Ala	Trp	Cys	Trp	Leu	Asp	Phe	Leu	Ile	Val	Val	Val	Ser	Val	Leu
1100						1105						1110		
Ser	Leu	Met	Asn	Leu	Pro	Ser	Leu	Lys	Ser	Phe	Arg	Thr	Leu	Arg
1115						1120					1125			
Ala	Leu	Arg	Pro	Leu	Arg	Ala	Leu	Ser	Gln	Phe	Glu	Gly	Met	Lys
1130						1135					1140			
Val	Val	Val	Tyr	Ala	Leu	Ile	Ser	Ala	Ile	Pro	Ala	Ile	Leu	Asn
1145						1150					1155			
Val	Leu	Leu	Val	Cys	Leu	Ile	Phe	Trp	Leu	Val	Phe	Cys	Ile	Leu
1160						1165					1170			
Gly	Val	Asn	Leu	Phe	Ser	Gly	Lys	Phe	Gly	Arg	Cys	Ile	Asn	Gly
1175						1180					1185			
Thr	Asp	Ile	Asn	Met	Tyr	Leu	Asp	Phe	Thr	Glu	Val	Pro	Asn	Arg
1190						1195					1200			
Ser	Gln	Cys	Asn	Ile	Ser	Asn	Tyr	Ser	Trp	Lys	Val	Pro	Gln	Val
1205						1210					1215			
Asn	Phe	Asp	Asn	Val	Gly	Asn	Ala	Tyr	Leu	Ala	Leu	Leu	Gln	Val
1220						1225					1230			
Ala	Thr	Tyr	Lys	Gly	Trp	Leu	Glu	Ile	Met	Asn	Ala	Ala	Val	Asp
1235						1240					1245			
Ser	Arg	Glu	Lys	Asp	Glu	Gln	Pro	Asp	Phe	Glu	Ala	Asn	Leu	Tyr
1250						1255					1260			
Ala	Tyr	Leu	Tyr	Phe	Val	Val	Phe	Ile	Ile	Phe	Gly	Ser	Phe	Phe
1265						1270					1275			
Thr	Leu	Asn	Leu	Phe	Ile	Gly	Val	Ile	Ile	Asp	Asn	Phe	Asn	Gln
1280						1285					1290			
Gln	Gln	Lys	Lys	Leu	Gly	Gly	Gln	Asp	Ile	Phe	Met	Thr	Glu	Glu
1295						1300					1305			
Gln	Lys	Lys	Tyr	Tyr	Asn	Ala	Met	Lys	Lys	Leu	Gly	Thr	Lys	Lys

Ser Leu Met Asn Leu Pro Ser Leu Lys Ser Phe Arg Thr Leu Arg
1115 1120 1125

Ala Leu Arg Pro Leu Arg Ala Leu Ser Gln Phe Glu Gly Met Lys
1130 1135 1140

Val	Val	Val	Tyr	Ala	Leu	Ile	Ser	Ala	Ile	Pro	Ala	Ile	Leu	Asn
1145						1150					1155			

Val	Leu	Leu	Val	Cys	Leu	Ile	Phe	Trp	Leu	Val	Phe	Cys	Ile	Leu
1160						1165					1170			

Gly Val Asn Leu Phe Ser Gly Lys Phe Gly Arg Cys Ile Asn Gly
1175 1180 1185

Thr Asp Ile Asn Met Tyr Leu Asp Phe Thr Glu Val Pro Asn Arg
1190 1195 1200

Ser	Gln	Cys	Asn	Ile	Ser	Asn	Tyr	Ser	Trp	Lys	Val	Pro	Gln	Val
1205						1210					1215			

Asn	Phe	Asp	Asn	Val	Gly	Asn	Ala	Tyr	Leu	Ala	Leu	Leu	Gln	Val
1220						1225					1230			

Ala Thr Tyr Lys Gly Trp Leu Glu Ile Met Asn Ala Ala Val Asp
1235 1240 1245

Ser Arg Glu Lys Asp Glu Gln Pro Asp Phe Glu Ala Asn Leu Tyr
1250 1255 1260

Ala Tyr Leu Tyr Phe Val Val Phe Ile Ile Phe Gly Ser Phe Phe
1265 1270 1275

Thr	Leu	Asn	Leu	Phe	Ile	Gly	Val	Ile	Ile	Asp	Asn	Phe	Asn	Gln
1280						1285					1290			

Gln	Gln	Lys	Lys	Leu	Gly	Gly	Gln	Asp	Ile	Phe	Met	Thr	Glu	Glu
	1295					1300					1305			

Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Thr Lys Lys

1310						1315						1320			
Pro	Gln	Lys	Pro	Ile	Pro	Arg	Pro	Leu	Asn	Lys	Cys	Gln	Ala	Phe	
1325						1330					1335				
Val	Phe	Asp	Leu	Val	Thr	Ser	Gln	Val	Phe	Asp	Val	Ile	Ile	Leu	
1340						1345					1350				
Gly	Leu	Ile	Val	Leu	Asn	Met	Ile	Ile	Met	Met	Ala	Glu	Ser	Ala	
1355						1360					1365				
Asp	Gln	Pro	Lys	Asp	Val	Lys	Lys	Thr	Phe	Asp	Ile	Leu	Asn	Ile	
1370						1375					1380				
Ala	Phe	Val	Val	Ile	Phe	Thr	Ile	Glu	Cys	Leu	Ile	Lys	Val	Phe	
1385						1390					1395				
Ala	Leu	Arg	Gln	His	Tyr	Phe	Thr	Asn	Gly	Trp	Asn	Leu	Phe	Asp	
1400						1405					1410				
Cys	Val	Val	Val	Val	Leu	Ser	Ile	Ile	Ser	Thr	Leu	Val	Ser	Arg	
1415						1420					1425				
Leu	Glu	Asp	Ser	Asp	Ile	Ser	Phe	Pro	Pro	Thr	Leu	Phe	Arg	Val	
1430						1435					1440				
Val	Arg	Leu	Ala	Arg	Ile	Gly	Arg	Ile	Leu	Arg	Leu	Val	Arg	Ala	
1445						1450					1455				
Ala	Arg	Gly	Ile	Arg	Thr	Leu	Leu	Phe	Ala	Leu	Met	Met	Ser	Leu	
1460						1465					1470				
Pro	Ser	Leu	Phe	Asn	Ile	Gly	Leu	Leu	Leu	Phe	Leu	Val	Met	Phe	
1475						1480					1485				
Ile	Tyr	Ala	Ile	Phe	Gly	Met	Ser	Trp	Phe	Ser	Lys	Val	Lys	Lys	
1490						1495					1500				
Gly	Ser	Gly	Ile	Asp	Asp	Ile	Phe	Asn	Phe	Glu	Thr	Phe	Thr	Gly	
1505						1510					1515				
Ser	Met	Leu	Cys	Leu	Phe	Gln	Ile	Thr	Thr	Ser	Ala	Gly	Trp	Asp	
1520						1525					1530				

Thr	Leu	Leu	Asn	Pro	Met	Leu	Glu	Ala	Lys	Glu	His	Cys	Asn	Ser
1535						1540					1545			
Ser	Ser	Gln	Asp	Ser	Cys	Gln	Gln	Pro	Gln	Ile	Ala	Val	Val	Tyr
1550						1555					1560			
Phe	Val	Ser	Tyr	Ile	Ile	Ile	Ser	Phe	Leu	Ile	Val	Val	Asn	Met
1565						1570					1575			
Tyr	Ile	Ala	Val	Ile	Leu	Glu	Asn	Phe	Asn	Thr	Ala	Thr	Glu	Glu
1580						1585					1590			
Ser	Glu	Asp	Pro	Leu	Gly	Glu	Asp	Asp	Phe	Glu	Ile	Phe	Tyr	Glu
1595						1600					1605			
Val	Trp	Glu	Lys	Phe	Asp	Pro	Glu	Ala	Ser	Gln	Phe	Ile	Gln	Tyr
1610						1615					1620			
Ser	Ala	Leu	Ser	Asp	Phe	Ala	Asp	Ala	Leu	Pro	Glu	Pro	Leu	Arg
1625						1630					1635			
Val	Ala	Lys	Pro	Asn	Lys	Phe	Gln	Phe	Leu	Val	Met	Asp	Leu	Pro
1640						1645					1650			
Met	Val	Met	Gly	Asp	Arg	Leu	His	Cys	Met	Asp	Val	Leu	Phe	Ala
1655						1660					1665			
Phe	Thr	Thr	Arg	Val	Leu	Gly	Asp	Ser	Ser	Gly	Leu	Asp	Thr	Met
1670						1675					1680			
Lys	Thr	Met	Met	Glu	Glu	Lys	Phe	Met	Glu	Ala	Asn	Pro	Phe	Lys
1685						1690					1695			
Lys	Leu	Tyr	Glu	Pro	Ile	Val	Thr	Thr	Thr	Lys	Arg	Lys	Glu	Glu
1700						1705					1710			
Glu	Gln	Gly	Ala	Ala	Val	Ile	Gln	Arg	Ala	Tyr	Arg	Lys	His	Met
1715						1720					1725			
Glu	Lys	Met	Val	Lys	Leu	Arg	Leu	Lys	Asp	Arg	Ser	Ser	Ser	Ser
1730						1735					1740			

His Gln Val Phe Cys Asn Gly Asp Leu Ser Ser Leu Asp Val Ala
 1745 1750 1755

Lys Val Lys Val His Asn Asp
 1760 1765

<210> 21
 <211> 8
 <212> PRT
 <213> Rattus norvegicus

<400> 21

Ile Asp His His His His His His
 1 5 8

<210> 22
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide for
 raising antibodies

<400> 22
 Cys Asn Gly Asp Leu Ser Ser Phe Gly Val Ala Lys Gly Lys Val His
 1 5 10 15

<210> 23
 <211> 18
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Peptide for
 raising antibodies

<400> 23
 Cys Asn Asp Gly Leu Ser Ser Leu Asp Val Ala Lys Val Lys Val His
 1 5 10 15

Asn Asp

<210> 24
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: PCR primer

 <400> 24
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 <210> 25
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR primer

 <400> 25
 ggttctagat cagtcacagt ggaccttgcc 30

 <210> 26
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR primer

 <400> 26
 gcctcggcga aagtagtggt agg 23

 <210> 27
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR primer

 <400> 27
 cctaccacta ctttcgccga gg 22

 <210> 28
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR primer

 <400> 28
 tacgaagtaa atgtaaccga gtga 24

 <210> 29
 <211> 23

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR primer

 <400> 29
 ctcggttaca tttacttcgt agt 23

 <210> 30
 <211> 40
 <212> DNA
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 <400> 30
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 <210> 31
 <211> 24
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 <220>
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 <400> 31
 tattgtggtg ttccatggcc aaga 24

 <210> 32
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 gccatggaac accacaatat g 21

 <210> 33
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 <400> 33
 cacgaagtaa aggtatgcgt atag 24

<210> 34
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<213> Artificial Sequence

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<210> 35
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<212> DNA
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<223> Description of Artificial Sequence: PCR primer

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